SOCIAL MEDIA USING MOBILES – A BOON FOR THE
AGRICULTURAL EXTENSION WORKERS: A GENERIC CONCEPT

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ABSTRACT

Usage of mobiles in India is increasing day by day. There penetration in the rural people is increasing. This rural population is backbone of Indian agriculture and its major portion is dependent of the farming and related activities. These farmers need the precise, authenticated and timely information. Social media can be one of the best and optimal tools to disseminate the latest information from the research organization to the end users like farmers. This paper describes the conceptual framework for the using the social media application by the various organization to disseminate the agricultural related information.

KEYWORDS: Social Media, Agricultural Information, Mobile Applications, Whatsapp

INTRODUCTION

Indian agricultural sector is one of the main sectors of the Indian economy. In contribute approximately 14% of India's Gross Domestic Product (GDP) and 11% of its export. About 69% of Indian population lives in rural areas. Income of about 31% of this rural population depends upon agriculture related activities. Also, a large number of industries are dependent upon the raw material produced by agricultural sector.

During 10th five year plan (2007-12) there was 2.38% average rate of agricultural growth in India which rose to 3.6% per annum during 11th five year plan (2007-12). It is important to increase growth of agriculture production [1] using technology to achieve targeted 8% GDP contribution during 12th five year plan (2012-17) and to meet escalating demands for food due to high population growth, increase in per capita income *etc*.

Various government and Non-Government Organizations (NGOs) are working to improve the quantity and quality of agricultural products. Huge efforts are being initiated by various organizations like Indian Council of Agricultural Research (ICAR), Central and State Agricultural Universities (SAUs) and their Regional Research Stations (RRSs), Krishi Vigyan Kendras (KVKs) along with other public and private organizations and NGOs. It is very significant for these entities to publicize proper, precise and hottest information to farmers for taking timely exploit the information and to make decisions to improve their agricultural output. These institutions work dedicatedly for the welfare of agricultural community but their initiatives have been usually criticized for their limited coverage, sustainability and its effect on agricultural community. Therefore, it is required that agricultural inputs should be timely disseminated to its appropriate quarters using latest information technological tools provided relevant quarters are ready to adopt these technological tools required for information transfer.

Improvement of agricultural and rural development is being focused through emerging field of e-Agriculture [2] using improved information and communication processes. Print and electronic media such as news-papers, pamphlets, libraries, televisions and information centers (like Kissan Call Centers *etc.*) are playing very important role in providing information to the farmers. These information centers are basically providing information to farmers using the available resources to them. Improved data management for better decision-making can be achieved by the utilization of information with appropriate information and communication technology (ICT). For providing online information to distantly located stakeholders, ICT can be used in breaking the barriers of these remote places for information delivery, which is the major concern for information dissemination.

AGRICULTURAL INFORMATION IN FARMER'S VIEW

Mobile phone subscription is increasing day by day in rural areas of India. Farmers require the timely and precise information. To study the requirements of the farmer for information dissemination a survey had been conducted on a sample of farmers in Punjab, India [3]. This survey included the usage of internet on mobile, computer for agricultural information needs. The information from the survey was compiled and it is found that 63% know Internet usage and only 38% of farmers surf the Internet to get agriculture-related information. Approximately 99% of farmers use mobile phones efficiently having multimedia features, etc., 95% of farmers opted for getting the information using SMS services etc.

MOBILE USAGE SCENARIO IN INDIA

From the perception of the small farm-holder, the eminence and consistency of information remained key issues even though healthy knowledge resources are available. These sources hardly provide the farmers any information which is steady, trustworthy, localized, current and customized for their use. There is barely any resource which can provide the quantum of information as and when required by the farm-holder during the whole farming cycle. Farmers need information which should be readily available and useful to them round the clock at the location of farm field [3]. Various web repositories are available that contains the generic information about the various agricultural activities and processes, but lack of literacy about usage of computers/laptops by the farmers is a big concern. Now a day, mobile smart-phones are available at economical rates and these are easy to use. Mobile communication has become an important tool for voice and data transfer.

Telecom Regulatory Authority of India (TRAI) has released data that there are 969.89 million mobile subscribers in India as on 31st March 2015. About 42.70% of these subscribers belong to rural areas with a rural tele-density of 47.78 as against urban tele-density of 143.08 [4]. A report [5] has described that India will reach 236 million mobile internet users by 2016, and 314 million by 2017. It has also mentioned that there was approx. 200 million internet users in 2013 , which may rose to over 500 million internet users by 2017 including 314 million mobile internet users. This explains the growth story of mobile internet in India which is on the upsurge. This report has found that the rural growth story in the coming years will likely be through 2G technologies. 3G and 4G may continue to be primarily an urban phenomenon for the next few years. Increased internet enabled device penetration e.g. smart phones; decreasing handset prices and data plans tariffs are helping create a suitable environment for a rapid growth of mobile internet in India, with rural India set to take the lead. As of June 2014, nearly 50% of the active internet users in rural areas accessed internet using mobile phones, community service centers and cyber cafes. 38% of the active internet users use mobile phone as the main access point.

Mobile devices are now becoming the most suitable means to disseminate agriculture related information to farmers in rural areas with 2.70% monthly growth of rural mobile subscription. These devices have lots of benefits over computers/laptops including low cost, easy interface and convenient usage by farmers and higher penetration in the emerging nations [6]. A Study [7] has mentioned about the potential offered by mobile telephony to raise output in the agricultural segment as a whole. As farming communities are conversing with the use of mobile services, the information services continue to adapt and multiply. By using mobile technology, the farmers can receive latest agriculture related information using Short Message Service (SMS). However, it has been observed that there exist persistent weaknesses in mobile technology for agriculture [8] such as messaging services deliver information that are not tailored to farmers' requirements, information provided at the wrong time and unable to consider localized parameters. These concerns lead to the key issue of sustainability of the service. Integrating villages into mobile technologies for maximizing the impact in rural areas is a challenging task [9].

The notable mobile growth story depicts a striking picture that the social media on mobiles can be a good platform for exchange of open minded ideas across the globe with in the circle. According a research, total social media users have been forecasted to grow everywhere, but the most volatile growth over the next few years is estimated to occur in the Asia-Pacific region (including India, China and Indonesia), the Middle East, Latin America, and Africa. As users in these regions join in these technologies, rural agricultural users will likely to gain a new corridor of information and social connections[10]. By 2017, at least a third of the planet will be engaged regularly through social media.

SOCIAL MEDIA

Social online media are a class of web-based applications and information sources, that are typically characterised by collaborative content creation driven by explicit or implicit social networks that represent virtual communities of shared interest[11]. Social media platforms can expand the reach of one's presence in the community. It can strengthen the relations with the partners and support the new initiative of a program or an activity undertaken or to be under taken. The so-called social media technologies are based on Web 2.0 technologies. It encapsulates a broad range of web-related communication technologies like wikis, blogs, virtual worlds and social networking, and other social media forms. Main feature of the social media is that it unites these ostensibly contrasting technologies under a single umbrella. These Various characteristics of social media can be précised by the 5 C's [12]: communication, collaboration, community, creativity, and convergence.

Communication

Social media technologies are concerned with communication between and among human beings. This communication may be unidirectional, bidirectional, or multi-directional, collaborative, networked, or viral. Social networking sites like Facebook and Twitter enable communication among groups of people, large and small. Videos that go "viral" may be treated as the best example of the rapid speed of communication over networked Web 2.0 technology platforms.

Collaboration

New media technologies enable collaboration over the Internet. Blogs in general have limited collaboration, although a single blog may be shared among a group of bloggers and sometimes a blog may be used for group work.

Community

Social media like Facebook, WhatsApp, Twitter and other mobile and web-enabled social media forms serve to make the world a smaller place. Due to these technologies, groups of people, large and small, are better able to interact more regularly, stay in touch, and achieve various targets. Social media technologies fostering community are democratic and inclusive.

Creativity

Social Media also promotes creativity. As consumers of digital media do not simply, read, listen, view, or play it, they can also edit, modify, and create mashups. Social media technologies enable user-generated content, and have much more active audience members who create, edit, post and contribute content.

Convergence

The past years have observed a convergence of technology, which may be due to prevalent digitization and Internet. Adaptation is the crucial to existence in the Internet age. Technology has taken a vast leap. Its convergence in Internet and the web and mobile technologies has promoted the online social media.

SOCIAL MEDIA IN AGRICULTURE

Social media is a platform for a user to engage with an audience and capture their attention. It has swiftly become key information and networking source for the agricultural sector. Be it physical farming or working within a rural business, it has been a vast gain to the agriculture sector in recent years[13]. This sector is taking on social media and utilising it to endorse knowhow of the agricultural industry as well as network with other agricultural experts. The communities and relationships that agriculture is largely based on are further extended through these channels. Rural agricultural workers have begun to use social media to fight the feeling of isolation which may have risen due to the nature of their work. Initially, there was a doubt about its use within the agriculture industry that how do it will link to running a rural business. But usage of smartphone by the rural population must have strengthened the feeling that it can be a good tool for the information dissemination. In Agricultural sector, social media can be used for the technology demonstration, new implements working procedures, weather forecasting, management of soil and water, new varieties and their features, pest and disease management, crop cultivation techniques, fertilizer application, handling of post-harvest, food security, safety, preservation and processing, management of food storage, quality, packing, transportation, marketing etc.

An Organization like SAU can obtain the advantages of Social Media. These advantages includes their presence among farming community, obtain feedback from farmers, make easy demonstration of technology, they are in-touch with the farming community around the clock and they can address common problems can be addressed simultaneously

Social Media Platforms

Various social media platform are in the age of internet. The examples include Facebook, Twitter, Linkedin, Pinterest, YouTube and WhatsApp etc.

Face Book

It is one of the most commonly used and known social media platforms all over the globe. It is most commonly used for individuals to connect with their family and friends online and share personal information such as photos, updates

and more with your select group of friends. Privacy settings allow your personal pages to be only accessed by whomever you choose. Facebook is also now widely used for businesses and interest groups to build a fan base and also connect and interact directly with their consumers and clients. Facebook can be useful for farmers and industry to connect with consumers. It is also a useful place for more in depth discussions as there is no limit on the number of characters that can be used. Photos and other content can also be shared easily.

YouTube

It is a video streaming service which allows users to create and upload videos to the website which then can be shared to anyone worldwide. Educating farmers about the latest technologies and its usage using the videos is an effective medium.

LinkedIn

It is inclined toward the professional community. It allows the professionals to network with work colleagues and is a prevailing for brands and job seekers. One can post his resume, connect with other professionals, and keep up to date with industry news. One can follow groups that are focused on relevant topics of interest.

Twitter

It is a popular media that allows you to "tweet" 140 character updates and connect with people from around the world. News links, images, or motivating quotes can be shared. Retweet messages to increase their reach, and send direct messages is another way to share the thoughts. Twitter allows connecting with people who have never met but share common interests.

Pinterest

It is an online pinboard where users share images, interests, and hobbies. It is a good tool to share images from the fields, or any other information. It primarily focuses on visual sharing.

Whatsapp

To a greater extent it can be considered as the combination of mutual sharing of text audio video among the community or individual. It has become a common platform for information sharing among the Indian population. Any information shared in this platform can cause the cumulative effect.
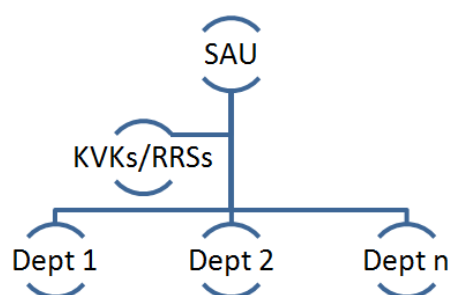
WhatsApp is a obvious leader in mobile messaging in India like it is in Europe and Latin America[14]. A big reason for its success is the firm focus by the founders of WhatsApp, very much like Google's focus, on speed and simplicity. The company's product philosophy is 'No Ads, No Games, and No Gimmicks'. India's many WhatsApp users are hoping that other social media tools -- full of ads, games and gimmicks -- allows this instant messaging service to stay the way as it is simple, clean and fast.
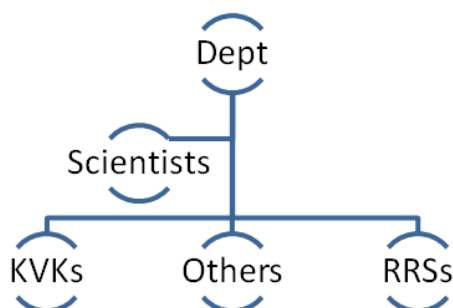
CONCEPT OF INFORMATION FLOW

In the arena of social media, the extension workers can use the social media tools for information collection and dissemination. On such example is WhatsApp. This mobile application is having the very large number of active users in India. If the rural population is taken into considerations, this can be the appropriate system for information delivery. The basic requirement of the information flow is the contact information of the stakeholders; this includes the Mobile numbers

of the farmers. All the KVKs/RRSs can have the contact information in their jurisdiction as they are doing the extension activities in their respective areas. The Farmer festival/ kissan melas organized by the SAUs can be a boon to collect the information. Similarly, various demonstrations, training etc. can be helpful in this regard.
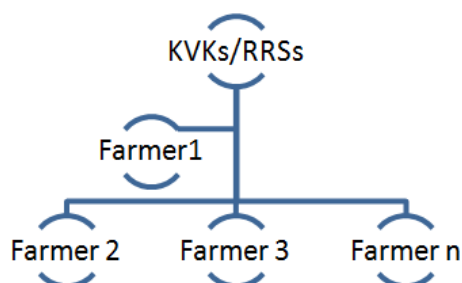
Using social media platform and using it wisely, the extension workers can be a good liaison between the farmers and scientists. Here is the simple concept which can be used by an organization like SAU for dissemination of the information from/to farmers through their established system of hierarchy. Figure 1 depicts that group may be consists of the parent node like SAU and it is having various child nodes that consists of various departments KVKs and RRSs. In Figure 2 the department creates the group being the parent node or administrator and it can have all the scientists involved and may include various other stakeholders like KVKs and RRSs. Similarly the Figure 3 depicts the role of extension workers. The KVKs having the group of extension workers and the farmers associated can exchange the information among them.

Figure1: Sample Group of Users for SAU-Departments/KVKs/RRSs

Figure2: Sample Group of Users for Departments-Scientists – KVKs-RRSs

Figure 3: Sample Group of Users for KVKs - Farmers

Two approaches can be considered for the information flow between parent and child nodes

- Top-Down approach

- Bottom Up approach

In top-down approach the information flow is from the top of the hierarchy. Any kind of information that parent node can pass to their child node. And in the Bottom-Up approach child node can request the information from the parent and other child nodes.

The organization want to send the information (e.g. releases a variety of any crop, audio, video and images) to all the members as depicted in Figure 1 and the parent node of the figure 3 who is the child node of the Figure 1 can forward this information to the farmers. So the information has been disseminated to farmers in a quick fashion which is usually taking a long time to reach the actual stakeholders like farmers. Similarly, A farmers want to get any kind of information from the KVKs, the parent node can reply to the query of the farmers. This query may be based on text, image, audio or video from both parent and child. If the query raised by the farmers is out of scope of the parent node, the information can be forwarded to the concerned departments to whom the query is related as described in Figure 2. The query may be answered by concerned department and it is forwarded to the parent node of the Figure 3. The parent node of the Figure 3 will forward the solution of the query to concerned farmer in the group. The advantage of this process is that all the members will be apprised of the query and solution thus further strengthening the extension system.

Possible Chances of Failure

Though there are great advantages and uses of the social media and its applications, but there are some drawbacks also. It lacks emotional connection among the extension functionaries and farmers. It may convey inauthentic expression of feelings. It decreases face-to-face communication skills. It may diminish understanding and thoughtfulness. It can facilitate laziness. The extension functionary can create own skewed self-image. However these drawbacks can be overcome by providing relevant and updated information, awareness creation and capacity building among the farmers, sensible use of social media and institutionalizing social media, encouraging self-publication and collective contribution, choosing suitable mix of social media and appropriate content, satisfying the heterogeneous users, by keep all post positive and build your community. The major challenge is to create the user database, making active the users to participate in the groups, changing the mindset of the users etc.

CONCLUSIONS

In the age of internet throughout the world, the social media is impacting the life of mankind. The tools of social media can be helpful in appraising the appropriate information to the mankind. For the agricultural community, the information from the research fields, market and government to the end-user like farmers is very important. The information must be appropriate authentic and precise. The social media is one such platform using tools like Facebook WhatsApp. In this paper the concept of the flow of information among the farmers and the organization like SAUs which are contributing to the agricultural sector. Only need is to have the appropriate database of the users and the concrete extension networks for information dissemination.

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